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GEOGRAPHICAL RECORD

AMERICAN GEOGRAPHICAL SOCIETY

Presentation of the Cullum Geographical Medal to His Serene Highness Albert I, Prince of Monaco. At the monthly meeting of the American Geographical Society on April 23, 1921, at the Engineering Societies' Building, 29 West Thirty-ninth Street, the Cullum Medal of the Society was presented to His Serene Highness Albert I, Prince of Monaco. In presenting the medal, President Greenough, who presided at the meeting, spoke as follows:

"The present occasion is in some respects unique in the long history of the Society. Our royal guest has divested himself, for the time being, of his prerogative as Sovereign, and desires to be met here solely on the universal platform of scientific research and attainment. Therefore, in awarding him the medal, which as your President, I am about to present, the short inscription upon it was framed in simple phrase as follows:

TO ALBERT I, PRINCE OF MONACO
1921

*By intensive exploration and by research and
publications of the highest order he has advanced
the science of oceanography and extended
man's knowledge of the sea and its resources.*

"It is difficult to summarize briefly the methods and results which have distinguished the labors of our guest during a period now exceeding a quarter of a century. In every department of oceanography he has been the leading exponent, and he has provided an establishment for the preservation and continuance of his life work by the building in Paris and Monaco of two beautiful structures to serve as a museum for his collections, and as a laboratory for his permanent staff. This Oceanographic Institution, as it is named, has been adequately endowed by him, and under his supervision directs the forces in vessels, equipment, plans, and personnel requisite for his investigations.

"His yacht, *The Princess Alice*, has periodically traversed the ocean, mapping the configuration of its floor, measuring its currents, and revealing the mysteries of the life and condition of its denizens, employing in all these researches many new and ingenious instruments and devices. Likewise, valuable meteorological studies have been conducted of great interest and practical value to navigators.

"It is not possible at this time to enumerate all his varied contributions to scientific learning, which embrace not only the surface of the waters, but likewise, the elements above and below them. Suffice it to say that the institution which he has founded stands the chief of its kind in the world.

"And now, Sir, on behalf of the American Geographical Society, I beg that you will receive this memorial of its appreciation of your long continued service to the science to which we are mutually devoted. It will be a lasting source of pride to the Society that our insignia have been accepted by one who has contributed so notably, alike by his own achievements, by the distinction of his personality, and by the incentive of his example."

After receiving the medal and expressing his appreciation of it His Highness outlined the beginnings of his work in oceanography and the development of his great oceanographic museum. His talk was illustrated with still and moving pictures representing almost all phases of the actual field work necessary to gather the types on exhibition at the museum. On the geographical side there was discussed both the methods and the results of soundings of the sea and the air. An informal reception followed the lecture.

Elections to Fellowship. At the April meeting of the Society, President Greenough presiding, there were presented with the approval of the Council the names of 266 candidates who were duly elected as Fellows of the Society.

Presentation of the Livingstone Medal to William Speirs Bruce. The presentation of the Livingstone Medal to William Speirs Bruce took place at the monthly meeting of

the Royal Geographical Society in London on December 20, 1920, the occasion being felicitiously chosen to precede a discussion on the "*Future of Polar Exploration*."

Introducing Ambassador John William Davis, by whom the presentation was made, President Lieutenant-Colonel Sir Francis Younghusband said:

"The American Geographical Society of New York have awarded their Livingstone Medal to Dr. Bruce, the great Antarctic explorer. Dr. Bruce unfortunately is not able to be present here this evening on account of ill health, but Dr. Rudmose Brown is here to receive the medal on his behalf, and His Excellency, the American Ambassador, has honored us with his presence this evening; he will, on behalf of the American Geographical Society of New York, present the medal to Dr. Rudmose Brown. At a meeting when we are going to discuss both the past and the future Polar exploration we thought it a specially favorable opportunity for this ceremony. I will now ask His Excellency to present the medal."

In presenting the medal Ambassador Davis said:

"I have in my possession, as the President has told you, the David Livingstone Centenary Medal which was founded by the Hispanic Society of New York on the occasion of the one-hundredth anniversary of the birth of David Livingstone and is to be awarded by the American Geographical Society, for whom I speak, for scientific achievement in the field of geography in the southern hemisphere. It is my very great pleasure, on behalf of the American Geographical Society of New York, to deliver that medal tonight to the representative of the distinguished scientist and explorer whom they have chosen as its recipient. To this gathering, of course, I need say nothing in vindication of their selection, nor can I fail to express my own gratification that no narrow confines have limited their search for a person worthy to receive the medal and that they have found such a recipient in the British Isles. To give even a catalogue of all Dr. Bruce's achievements in the field of geographic exploration would be beyond either my powers or your patience, but since the medal is directed solely to exploration in the southern hemisphere, it is well to recount that in 1892-1893 Dr. Bruce was the naturalist of the Scottish Antarctic expedition, in 1896-1897 he was the leader of the Jackson-Harmsworth Polar expedition, in 1902-1904 he was the leader of the Scottish National Antarctic expedition. He was the discoverer of the 150 miles of the coast line of the Antarctic, named by him Coats Land, and has bathymetrically surveyed great areas of the South Atlantic Ocean and the Weddell Sea. He was for many years the Director of the Scottish Oceanographical Laboratory of Edinburgh, is an LL.D. of Aberdeen University, and a Fellow of the Royal Society of Edinburgh, and I feel for myself that it is not only a pleasure but an honor to deliver this tribute to so distinguished a scientist from his brothers in science across the sea."

The Ambassador thereupon presented the medal, in the acceptance of which on behalf of Dr. Bruce, Dr. Rudmose Brown spoke as follows:

"Your Excellency, I am asked by Dr. Bruce to thank the American Geographical Society for the high honor that it has conferred upon him, and you personally, Sir, for your kindness in coming here to deliver the medal. Dr. Bruce wishes me to assure you that he considers it a very high honor indeed that his work should be recognized by the countrymen of such great explorers as Wilkes, De Long, Greely, Peary, and others. I will convey this medal to Dr. Bruce, and your kind words, Sir, in presenting it."

Mr. Joerg's Mission. Mr. W. L. G. Joerg, Editor of the Research Series of the Society, sailed from New York on May 21 for a six months' journey in western and central Europe. He will investigate the status and tendencies of geographical work in learned societies and in universities and colleges; and in addition he expects to attend the meeting of the geographical section of the British Association for the Advancement of Science at Edinburgh from September 7 to 14, and to be the Society's representative at the centennial celebration of the Geographical Society of Paris from July 4 to 7. Communications to him may be addressed in care of Brown, Shipley & Company, 123 Pall Mall, London, S. W.

NORTH AMERICA

Great Cities of the United States, 1920. The 1920 census of the United States shows 64 cities with a population over 100,000. This includes single cities and group cities. The group cities (starred * in Table I and listed by components in Table II) are those that

make up one city mass of continuous extent, without regard to political control, even though it cross state boundaries (as at New York), international boundaries (as at Detroit), or deep water (as in both those cases), for deep water, when well supplied either with ferries or bridges, connects its shores in a most intimate way.

TABLE I—POPULATION OF CITIES OF OVER 100,000 PERSONS

1	New York*	6,657,447	34	Birmingham, Ala.	178,806
2	Chicago	2,701,705	35	Syracuse, N. Y.	171,717
3	Philadelphia*	1,952,250	36	Richmond, Va.	171,667
4	Detroit *	1,118,137	37	Norfolk, Va.*	170,164
5	Boston*	1,071,897	38	New Haven, Conn.	162,537
6	St. Louis, Mo.*	839,664	39	Memphis, Tenn.	162,351
7	Cleveland, O.	796,841	40	San Antonio, Tex.	161,379
8	Baltimore, Md.	733,826	41	Dallas, Tex.	158,976
9	Pittsburgh, Pa.*	681,412	42	Dayton, O.	152,559
10	Los Angeles, Cal.	576,673	43	Bridgeport, Conn.	143,555
11	Buffalo, N. Y.*	524,693	44	Duluth, Wis.*	138,588
12	Cincinnati, O.*	512,651	45	Houston, Tex.	138,276
13	San Francisco, Cal.	506,676	46	Hartford, Conn.	138,036
14	Milwaukee, Wis.	457,147	47	Scranton, Pa.	137,783
15	Washington, D. C.	437,571	48	Grand Rapids, Mich.	137,634
16	Kansas City, Kan. Mo.*	425,587	49	Paterson, N. J.	135,875
17	New Orleans, La.	387,219	50	Youngstown, O.	132,358
18	Minneapolis, Minn.	380,582	51	Springfield, Mass.	129,614
19	Oakland, Cal.*	317,946	52	Des Moines, Ia.	126,468
20	Seattle, Wash.	315,312	53	New Bedford, Mass.	121,217
21	Indianapolis, Ind.	314,194	54	Fall River, Mass.	120,485
22	Rochester, N. Y.	295,750	55	Trenton, N. J.	119,289
23	Portland, Ore.	258,288	56	Nashville, Tenn.	118,342
24	Denver, Colo.	256,491	57	Salt Lake City, Utah	118,110
25	Louisville, Ky.*	244,989	58	Albany, N. Y.	113,344
26	Toledo, O.	243,164	59	Lowell, Mass.	112,759
27	Providence, R. I.	237,595	60	Wilmington, Del.	110,168
28	Columbus, O.	237,031	61	Reading, Pa.	107,784
29	St. Paul, Minn.	234,698	62	Fort Worth, Tex.	106,482
30	Omaha, Neb.*	227,763	63	Spokane, Wash.	104,437
31	Akron, O.	208,435	64	Yonkers, N. Y.	100,176
32	Atlanta, Ga.	200,616		Lynn, Mass.	99,148
33	Worcester, Mass.	179,754		Tacoma, Wash.	96,965

The group cities are realities, but the census recognizes them only when they have been politically united, as Brooklyn and New York have been since 1898. Brooklyn was geographically a part of New York long before the city governments were "consolidated;" and Jersey City is today a part of New York—a fact more difficult to confirm politically.

The criterion used in selecting the adjacent towns to be included with a city is continuity of close, city-like occupation of the ground on land areas, which includes park spaces, properly a part of a city to maintain the health of its citizens, but does not include farm lands and meadows that may be included within the political city area, as in Queens Borough, New York. The group city so conceived is a more real city than the Metropolitan Districts of the Census Bureau, which include all population centers of 5,000 people within 10 miles of the city limits. No one who looks over the actual ground between New York and Paterson, whether he travels by train or road, can say that Paterson, N. J., is part of one continuous city with New York. There are doubtless many ties between the two towns that a little inquiry would bring out, but their separateness leaps to the eye. This is not equally true of Newark, for there is nothing between it and New York but water channels and marshes that may conceivably be dredged out or built up to form an expansion of the actual port of New York. Navigable water at a great seaport ties opposite shores most intimately. The proper selection of adjacent places to be included calls for local

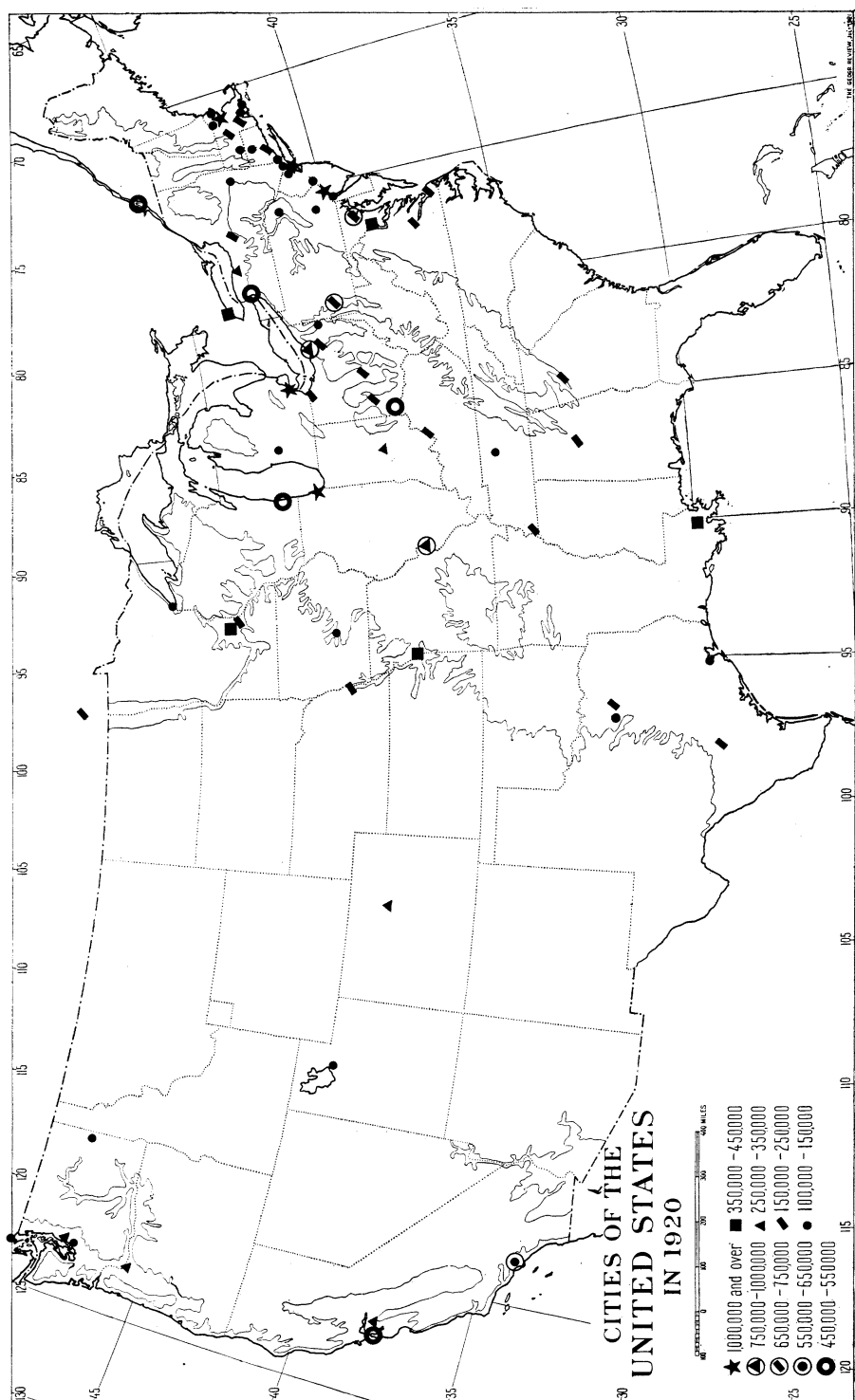


Fig. 1—Great cities of the United States (100,000 population and over) according to the 1920 census. Canadian cities have been added according to the 1911 census. Note distribution in regard to elevation as shown by the addition of the 1,000-foot contour line.

knowledge. Probably other places than those listed as group cities should be so regarded. The compiler of this list would be glad to have information on this head. Should St. Paul and Minneapolis be regarded as one?

TABLE II—COMPONENTS OF GROUP CITIES LISTED IN TABLE I

1	New York	5,620,048	11	Buffalo	506,775
	Newark, N. J.	414,524		Lackawanna	17,918
	Jersey City, N. J.	298,103			524,693
	Elizabeth, N. J.	95,783			
	Bayonne, N. J.	76,754	12	Cincinnati, O.	401,247
	Hoboken, N. J.	68,166		Covington, Ky.	57,121
	West Hoboken, N. J.	40,074		Newport, Ky.	29,317
	North Bergen, N. J.	23,344		Norwood, O.	24,966
	Union, N. J.	20,651			512,651
		6,657,447			
3	Philadelphia, Pa.	1,823,779	16	Kansas City, Mo.	324,410
	Camden, N. J.	116,309		Kansas City, Kan.	101,177
	Gloucester City, N. J.	12,162			425,587
		1,952,250			
4	Detroit, Mich.	993,678	19	Oakland, Cal.	216,261
	Hamtramck	48,615		Berkeley	56,036
	Highland Park	46,499		Alameda	28,806
	Windsor, Ont. (estimate)	29,345		Richmond	16,843
		1,118,137			317,946
5	Boston, Mass.	748,060	25	Louisville, Ky.	234,891
	Cambridge	109,694		Jeffersonville, Ind.	10,098
	Somerville	93,091			244,989
	Chelsea	43,184	30	Omaha, Neb.	191,601
	Everett	40,120		Council Bluffs, Ia.	36,162
	Brookline	37,748			227,763
		1,071,897			
6	St. Louis, Mo.	772,897	37	Norfolk, Va.	115,777
	East St. Louis, Ill.	66,767		Portsmouth	54,387
		839,664			170,164
9	Pittsburgh, Pa.	588,343	43	Duluth, Minn.	98,917
	Wilksburg	24,403		Superior, Wis.	39,671
	Homestead	20,452			138,588
	McKees Rocks	16,713			
	Sharpsburg	8,921			
	Bellevue	8,198			
	Millvale	8,031			
	Edgewood	3,181			
	Aspinwall	3,170			
		681,412			

On the map have been added the only great cities of Canada according to the census of 1911—Montreal 470,480, Toronto 376,538, Winnipeg 136,035, Vancouver 100,401 (estimates for 1919 give: Montreal 670,000, Toronto 489,681, Winnipeg 183,595, Hamilton, Ont. 110,137, Quebec 110,000, Vancouver 109,250, Ottawa 104,000). The 1,000-foot

contour line is also added. It shows strikingly how the cities are distributed over the lower lands and the passages afforded by river valleys. Of course effective communication in these days is always by rail beside the river.

MARK JEFFERSON

The Topographical Map of the United States. The mapping of our country may be said to have been in progress since the time Captain John Smith made a chart of Chesapeake Bay, but after three hundred years only forty per cent of our area has been topographically mapped and of this forty per cent a large part needed to be re-surveyed because of the improvement in methods and the greater accuracy demanded by the map users. It is safe to say that only between twenty-five and thirty per cent of the area of the United States has been adequately surveyed and mapped topographically.

Yet in various scientific, industrial and commercial undertakings the topographical map is a fundamental. No one would expect to have accurate geological surveys made in an area over which topographical surveyors have not previously operated; nor would one expect an engineer to construct a dam for the storage of water for either irrigation or power development without a topographical survey of the drainage basin. The highway engineers of the country need topographical maps in order to lay out their system of principal roads with a view of getting the most feasible route between centers of population and to provide low grades along the road. The forester needs to know the configuration of the forest area in the proper utilization of forest products. The stockman desires to know the slope of the ground in planning grazing operations. The prospective farmers need to know the configuration of the territory within which they expect to settle. Cases are known to the writer where farms have been selected without a visit from the purchaser when he had a topographical map covering the area and a report of the Bureau of Soils. Not the least of the uses of a topographical map are connected with defense. Its significance in military operations has been amply shown by the experience of the armies in Europe during the Great War.

The United States has vast natural resources in the form of minerals, including coal and iron, water power, lands that may be irrigated and drained, forest productions, etc., but we do not know just what we have in the way of resources nor do we know whether in all cases we can utilize those whose existence is known. In order to discover what we have and to utilize and conserve our resources we need the topographical map as a basis of our information and activities.

A special interest therefore is attached to the bill introduced in the House of Representatives on April 26, 1921, by Congressman Temple of Pennsylvania, providing for the completion of the topographical survey of the United States.

The bill if passed will authorize the president to complete, within a period of twenty years from the date of the passage of the act, a general utility topographical survey of the territory of the United States, including adequate horizontal and vertical control. The bill also provides for the preparation and publication of the resulting maps and data. The president would be authorized to utilize the services of such agency or agencies of the government as now exist or may hereafter be created and to allot funds to them from the appropriations made from time to time to carry out the purposes of the act. The bill also provides that co-operative agreements may be made between the agencies of the government carrying on the topographical surveying with any state or subdivision thereof. It is hoped that early hearings will be held by a Committee of Congress on this most important measure.

WILLIAM BOWIE

SOUTH AMERICA

General Rondon's Work in the Brazilian Wilderness. The April number of *France-Amérique* contains an appreciation by General Gamelin of General Rondon's work (Le Général Rondon et ses explorations au Brésil, pp. 81-87).

From his own country where his exploits have surrounded him with a halo as that of the legendary hero General Rondon's fame has traveled afield. Fellows of the American Geographical Society will recall the review of his achievements made by Colonel Roosevelt on the occasion of the presentation to General (then Colonel) Rondon of the David Livingstone Medal of the Society (*Geogr. Rev.*, Vol. 5, 1918, pp. 496-497). A native of Cuyabá, capital of Matto Grosso, Rondon has spent some thirty years of his life in the *sertão* of this

vast state. His explorations, made in the service of the Brazilian Telegraphic Commission, have covered a block of territory lying between the parallels 3° and 22° S. latitude and the meridians 50° and 65° W. of Greenwich. This great region is not infrequently known as Rondonia following the term of Professor Rôquette-Pinto in his anthropological-ethnological study "Rondonia" (*Archivos do Museu Nacional do Rio de Janeiro*, Vol. 20, 1917).

The most concrete result of Rondon's work is the telegraphic link between the waters of the Paraguay and the Amazon across the heart of the continent. It comprehends 4,500 kilometers of line, to which correspond paths 5 to 10 meters broad cut in part through tropical forest and in places paralleled by roads practicable for automobiles, and dotted by nuclei of native populations where nomadic savages are being initiated into ways of settled life. The work has been carried out in a series of stages. The years from 1890 to 1898 were spent in construction of the line from Goyaz to Cuyabá whereby this erstwhile isolated town was brought into touch with the rest of the country. From 1900 to 1904 the line was extended to Corumbá, the port of Cuyabá on the Paraguay. Here with the success that has peculiarly stamped his dealings with primitive peoples Rondon pressed into his service members of the intractable Bororo tribes. From 1905 to 1906 lines were laid in the south of the state along the Bolivian and Paraguayan frontiers. In 1907 Rondon embarked on the most important stage of his work as regards geographical results—that in the northwest for the installation of the line to Santo Antonio de Madeira. From this date to 1915 with his assistants he carried out the series of explorations of the Amazonian tributaries that take their source in the Matto Grosso uplands. It was on one of these that he was accompanied by Colonel Roosevelt in the journey that changed the "Rio de Duvida" to "Rio Theodoro" (Colonel Roosevelt's Exploration of a Tributary of the Madeira, *Bull. Amer. Geogr. Soc.*, Vol. 46, 1914, pp. 512–519). Here may be noted the recent decision of the Geographical Society of Rio de Janeiro to change the river name to "Rio Roosevelt." From 1915 to 1919 Rondon remained in Upper Matto Grosso and Amazonia completing his geographical work the results of which appear in the series of publications by the Comissão de Linhas Telegraficas Estrategicas de Matto-Grosso ao Amazonas.

EUROPE

Upper Silesia: An Essay in Geographical Description. Under the title "Ober-schlesien" Professor Bruno Dietrich of Breslau makes a contribution to a forthcoming volume of geographical sketches by pupils of Professor Hettner of Heidelberg (*Zwölf länderkundliche Aufsätze von Schülern Alfred Hettner's ihrem Lehrer zum 60. Geburtstag*, Breslau, 1921, pp. 63–80).

Upper Silesia, the terminal part of a political peninsula of Prussia projecting southeastward up the Oder drainage area between what used to be Austria and Russia but is now Czechoslovakia and Poland, is of special interest today on account of the political situation.

Dietrich's description of the natural subdivisions is informing but somewhat difficult to understand because of the repeated use of unimportant town names. The accompanying outline map is too crude to lessen this defect to any extent. In this note Dietrich's provincial method is replaced by a self-explanatory form of statement whose intelligibility may be tested by the reader's success in drawing or imagining an outline map as the successive specifications are followed.

The province of Upper Silesia is a quadrilateral of irregularly sinuous boundary, measuring 100 kilometers on the southwestern side, 120 kilometers on the northwestern, 140 kilometers on the northeastern, and 80 on the southern. It is for the most part underlain by horizontal indurated strata, much dislocated by block faulting; but the initially uneven surface thus produced is almost extinguished by post-faulting degradation, by a partial unconformable cover of less indurated strata, and by widespread unconsolidated deposits of glacial drift and loess. The resulting upland surface, from 200 to 300 meters in altitude, is for the most part of low relief, being a small section of the great plain of central Europe. The areas of sandy drift are generally wooded; the loess-covered areas are farmed. The upland is traversed a little west of its center by a 100-kilometer stretch of the moderately sinuous Oder valley, trending north-northwest, 6 kilometers wide at its upstream (southeastern) entrance and 12 kilometers wide at its downstream exit, with the towns of Ratibor near its upper end, Cosel above its middle, and the important city of Oppeln near its lower end. The province is thus divided into a smaller southwestern isosceles triangle and a larger north-eastern rectangle, both of indented sides. The smaller or triangular area is truncated at

its end, where it is 12 kilometers wide upstream; it widens to 60 kilometers at its downstream end and rises gradually to the foothills of the Sudeten on its southwestern side, near the middle of which a small salient of Czecho-Slovakia penetrates the triangle for 20 kilometers. This area is mostly agricultural, with Neisse in the northwest and Neustadt and Leobschütz on either side of the Bohemian salient as its chief towns; but a 40-kilometer segment of its northern angle is largely woodland, with Falkenberg near its center.

The larger rectangular area northeast of the Oder valley is 140 kilometers in length on its strongly indented northeastern side and 50 or 60 kilometers in width. A rich, loess-covered farming district 10 or 20 kilometers wide, of somewhat hilly surface, crosses its southern end where the ascent to the Beskiden ridges of the Carpathians begins; there Rybnik to the west and Pless to the east are the chief towns, and a long segment of the northern angle is occupied by a less fertile farming district which stretches 90 kilometers from the middle of its northeastern to the middle of its northwestern side; here Kreuzburg to the northwest, Rosenberg near the middle, and Lublinitz to the southeast are the chief towns. The rest and greatest part of the rectangle is chiefly woodland without large towns; but there are two important districts of other character. One of these is a higher upland belt, known as the Chelm, determined by an uplifted block of horizontal limestones, which modestly surmounts the rest of the region. It has a width of 10 to 20 kilometers and a length of 80 kilometers, trending east and west and therefore running obliquely across the middle of the rectangle from the Oder valley between Oppeln and Cosel nearly to the eastern border of the province and thus separating the great woodland area into a northern and a southern part. Forests prevail along the northern side of the belt where sandy drift is largely present; cultivated areas are found along the southern side where loess is abundant. The limestones of the Chelm contain ores of iron, zinc, and lead, as is further noted below; the ores are mined mostly near the eastern end of the belt, where Tarnowitz is the chief town.

Much more important than any other is a semicircular district next south of the Chelm, with its limiting diameter of 40 kilometers on the eastern border of the province; in this half circle—part of a larger area that continues east and south into Poland—deformed and degraded coal-bearing rocks reach the surface and determine a remarkable concentration of industries. Here are the richest coal reserves in Europe, and here mining, smelting, and manufacturing flourish, especially in the Prussian part of the coal-bearing area; for, although the international boundary cuts the coal field about in half, nearly 71 per cent of its product in 1911, or about 40,000,000 tons, came from Prussian mines, and this constituted 23 per cent of the coal mined in all Germany. Zinc and lead ores from the Chelm limestones are smelted here and supply 63 per cent and 20 per cent of the German product of these metals. Iron production is also important, although it is small compared with that of the Rhine province; but, as fuel for smelting is abundant, iron ore from the Chelm is largely supplemented by imported ore.

With the development of the mineral resources of this district, cattle and wood, which were the chief products of the province in earlier centuries, now have a relatively low rank; primitive iron smelting with charcoal, which used to be carried on in the woodland district north of the Chelm, is abandoned; and the small semicircular industrial district, formerly not populated more densely than the rest of the province, now has about 700,000 inhabitants, or a third of the total. Some of the industrial centers increased three or four fold in the 40 years following 1871. A network of railroads now connects many towns of large size, the chief being Königshütte, Beuthen, Gleiwitz, Zaborze, and Kattowitz; the landscape is characterized by shaft houses and furnace chimneys; the use of timber in the mines is causing serious encroachments upon the neighboring woodlands. Little wonder that the threatened loss of a province which includes so rich a district as this is dreaded by Germany; while the gain of the province by Poland would make a magnificent addition to her already great economic resources.

Dietrich's final remarks on the population of Upper Silesia are of interest, though their interpretation is open to question. As a borderland not defined by physiographic barriers, the people have been of mixed origin for centuries past. Since the time of Frederick the Great, when Silesia was Prussia's share of booty in the partition of Poland, Upper Silesia has been the southeastern outpost of Hohenzollern conquest and domination. In 1910 the German-speaking population was 884,000, and the Polish, 1,169,000; with less than 10 per cent of the total speaking other languages. But, of the Polish-speaking majority, Dietrich claims that many speak "Wasserpölnisch" and that these are really Germans who have acquired a local dialect of the prevalent language; also that even the Upper Silesian

Polish-speaking inhabitants consider themselves Silesians, and not Poles living in Silesia; and that the present movement in favor of junction with Poland does not represent the wishes of these inhabitants but results from a propaganda conducted from beyond the boundary.

On the other hand, a less prejudiced view may be found in the chapter on Poland by the junior author of Haskins and Lord's recent book, "Some Problems of the Peace Conference" (Cambridge, Mass., 1920). After asking: "Since the rise of Prussia was accomplished mainly by the spoliation of Poland, could any one hope to effect a genuine restoration of Poland without taking a great deal of land away from Prussia?" Lord adds that the Prussian official language statistics in Silesia and other provinces formerly Polish "have been demonstrated by the most painstaking and detailed investigations" to be "grossly inaccurate" and "in fact deliberately falsified for the purpose of making it appear that Prussia's Germanizing policy in her 'Eastern Marches' has been more successful than is actually the case." This is partly proved by the Prussian school census of former Polish territory, which shows Poles to be from 50 to 100 per cent more numerous than they are represented in the general census.

The abundance of mineral deposits in the semicircular district of southeastern Upper Silesia, unknown at the time of the partition of Poland, and the resulting great development of industries through the nineteenth century have greatly increased the intensity of feeling with regard to the possible readjustment of international boundaries. Thus the truly geographical factor of natural resources has a dominant share in determining economic and historical problems.

W. M. DAVIS

The Cartographical History of Lower Austria. The *Monatsblatt des Vereines für Landeskunde von Niederösterreich* issues its July-September number of 1918 as a testimonial to Dr. Oswald Redlich on his sixtieth birthday. Herein appears an article by Dr. Eugen Oberhummer on "Die Entstehung des Kartenbildes von Niederösterreich," brief but pointed, and written in the scholarly and scientific vein so characteristic of all that has appeared from the pen of that distinguished Austrian geographer.

The first attempts to give place on the map to the region of Lower Austria, it is noted, had an early date. One could not expect to find it laid down on the small world maps of the Greeks, such as were those of Anaximander or of Eratosthenes; but in the monumental portico map of Agrippa, one time minister of Augustus, we find a work overtopping any corresponding previous effort, and in this the provinces of Rhaetia, Noricum, and Pannonia appeared. How he had represented the Danube region we may judge from such maps as the Peutingerian table and the Ptolemy maps drawn a century and a half later, in which there does not appear to have been great improvement.

Dr. Oberhummer, in agreement with that greatest living authority on the geography of Ptolemy, Professor Joseph Fischer, believing that we have in the recently found Codex Vaticanus Urbinus 82 the real or excellent copies of the first Ptolemy maps, notes that this manuscript contains a map of the Danube region.

One would scarcely expect to find on the cloister maps of the middle ages any attempt at an accurate representation of Lower Austria, or of any other region; and yet on the Ebstorf map of the late thirteenth century we find the Danube with certain tributaries represented and the names Wena, Austria, Crenesa, Starkenberch, and others—the first time the names Vienna and Austria appear on a map.

The accuracy of coast representations as we find them on portolan charts is properly noted, as is also the fact that there followed soon after their appearance the attempt to give a corresponding accuracy to the representation of interior regions. The author refers to the improvement in this respect to be observed in the charts of Angelino Dalorto of 1325 and 1329 and in the Catalan map of 1375.

In the map of middle Europe by Nicolaus Cusanus of 1450, but known in later editions only, and in the map of Germany as given in the Nuremberg Chronicle we find the Danube region coming more and more into prominence. We further note, about this time, a sort of attempt to combine the Roman road-map idea and the ordinary land map, an example of which we have in the "Carta itineraria Europae" of Waldseemüller.

Special independent maps of individual regions came into existence in Germany in the sixteenth century, the first of them being the Johannes Stabius map of the crownlands of Austria as they were in 1508, while in the year 1545 appeared Wolfgang Lazius' map of

Neiderösterreich, that is the entire Grand Duchy of Austria. His was the pattern map for all those issued of the region until the appearance of the Matthias Vischer map of 1670.

The author makes mention of the remarkably fine military map of the Hapsburg Empire begun by the order of Maria Theresa, but not completed before 1783, and now belonging to the department of the royal military archives. He concludes with a reference to the special map of Austria prepared between the years 1873 and 1880, and to the "administrative" map of Lower Austria, the issue of which was undertaken by the Verein für Landeskunde but awaits completion.

E. L. STEVENSON

AFRICA

Kufra: A Prosperous Desert Settlement in Northern Africa. The eleven oases of Kufra, described by Ettore Ceriani in *L'Africa Italiana* (Vol. 39, 1920, No. 3), constitute one of the still imperfectly known human settlements of the Libyan interior.

Since the journey of Gerhard Rohlfs in 1879 only three Europeans have visited Kufra. Involuntary journeys were made by an Italian soldier who was held captive from 1914 to 1917 and by a French officer who a year later was detained in Kufra for some months (*L'Afrique Française, Renseign. Colon*, April, 1920, pp. 82-88). A few months ago a remarkably successful journey was accomplished by an Englishwoman, Mrs. Rosita Forbes whose route was from Benghazi to Kufra and via Siwa to Alexandria (*Nature*, May 19, 1921, pp. 366-367).

Kufra has changed from the rude village described by Rohlfs to the proportions of a fairly organized small town. Its inhabitants, numbering some 10,000 according to estimates, are drawn from various sections of Mohammedan Africa and betray by their racial diversity the importance of the site as a commercial and religious center. The site is favored by an ample underground water supply which holds the first place among its natural advantages. Its climate, characterized by infrequent rainfalls and a subtropical average range of temperature, is not subject to such excessive changes of temperature as occur in other North African localities.

The modern prosperity of Kufra dates from the time of its selection as headquarters of the famous Senussi order. A fertile soil and the importance of the site at the junction of caravan routes connecting the Mediterranean coast with the sparsely populated hinterlands of northern Africa determined the choice. A feature of interest which characterizes the social organization of the Kufra community is found in the system of highly divided land tenure which prevails in the area. The relative importance of Kufra over other oases of the desert lands of northern Africa is thereby explained. It is a factor which, coupled to a relatively fertile soil, has made for the prosperity of the settlements. Practically every resident operates a farm, however small. Ownership of the soil is vested in the Senussi fraternity in the majority of instances, land being rented in small lots so as to satisfy the entire community.

Caravan traffic likewise brought its contribution to the prosperity of the settlement. An idea of the importance of this traffic may be gathered from the fact that for the second half of 1919 the value of goods passing through Kufra and routed to Cyrenaica alone amounted to over 2,000,000 lire. The traffic, however, was larger in former days, when caravans consisting of hundreds of men and camels would halt for several days at Kufra, there to renew supplies and to refit themselves for the remainder of the journey. In recent years, however, the caravan transit has been directed to Egypt, owing to the proximity of the oases within Egyptian boundaries. This innovation has led to an import trade by way of Egyptian caravan roads, which to the Italian colonial authorities appears as undesirable competition to the routing of goods via Libyan ports and roads. It appears that not infrequently Italian goods reach Kufra by way of Alexandria.

From the shores of the Mediterranean three main routes, starting respectively from Jedabia, Siwa, and Dakhla lead to Kufra. From Jedabia the journey lasts about seventeen days, travel consuming a daily average of twelve hours and being mostly accomplished at night. Over these roads caravans plow their way laboriously through a desert of deep sands and dunes. Twice only during the journey is water encountered.

In addition to the Mediterranean roads there are caravan routes linking Kufra with the Sudan, Wadai, and Tibesti. Over all these roads a constant, one might almost say daily, traffic reaches the great Senussi center.

LEON DOMINIAN

ASIA

Medieval Origins of the Armenian Question. The first number of the new *Revue des Études Arméniennes* (Vol. 1, 1920, Paris) contains a scholarly study by J. Laurent (Professor at the University of Nancy) on "The Medieval Origins of the Armenian Question." M. Laurent first defines the term "Armenia." It has been applied to widely separated territories. "Great Armenia" has almost universally been used from classical times to designate the rough, mountainous tract between the headwaters of the Euphrates and the Araxes. This is a geographical expression. On the other hand the region called "Little Armenia," a political expression, has moved about in the course of history. In Greek and Roman times it embraced the upper valleys of the Lycus, Halys, and Euphrates; but during the middle ages it was shifted south to the shores of the Mediterranean.

Whatever her situation as a political entity, Armenia has always formed a disputed frontier zone between relatively powerful and jealous neighbors: Persians, Byzantine Greeks, Arabs, Seljuk and Ottoman Turks, and Russians. This explains in part why the Armenians have never set up a solid, lasting state and why their history right up to the present has been so tragic. Furthermore, the Armenians have never been able to settle their internal troubles. They are quarrelsome people among themselves, and the constant state of civil strife in which they have lived has been fostered and made the most of by their neighbors. Nevertheless, though torn by almost continuous struggles among her feudal lords (at one time there were no less than six rival "kings"), Armenia in the Middle Ages long managed to maintain a precarious and turbulent existence as an independent nation in the face of extraordinarily adverse circumstances both external and internal. The frontiers were continuously changing, and the entire state moved from a ninth-century home in the vicinity of Lakes Van and Sevan through various intermediate locations to the plains of Cilicia, where the Kingdom of Little Armenia, founded in the twelfth century, long lingered on as an outpost of civilization against the rising tide of Turkish conquest which was finally to overwhelm it.

Today Armenians are found not only in the regions now and formerly called "Armenia" but also in Constantinople as well as in large colonies throughout Anatolia. This is to a large extent the result of events that took place in the Middle Ages. Love of adventure, aggravated by abuses at home and the injustice of a feudalism which, if not actually depriving them of a share in their deceased father's property, subjected younger sons to the tyrannous feudal overlordship of their elder brothers, led to a continuous emigration of soldier-adventurers from among the nobles as well as of men of more humble estate. The lands and cities of the Byzantine Empire were the goal of most of these emigrants, who formed the nuclei of large Armenian colonies destined to preserve their own speech, customs, and traditions down to the present time.

AUSTRALASIA AND OCEANIA

Nauru: A Treasure Island of the Pacific. Situated in the central Pacific, 33 miles south of the equator and a few degrees west of the Gilbert Islands, is Nauru Island, famous for its vast deposits of the invaluable fertilizer, phosphate of lime. The island is 12 miles in circumference, 5,000 acres in extent. It has wide, flat foreshores, with a group of picturesque hills in the center, the location of the phosphate rock. Running completely round the island is a well-made, well-kept road sheltered by an avenue of coconut palms over eighty years of age. Though so near the equator the climate is comparatively cool and notably salubrious.

The Nauruans are a handsome, intelligent race. They are divided into two classes, the wealthy and ruling class, and the people, called "slaves of gratitude" from the fact they are maintained, that is fed and clothed, by the rich classes who control them. At the same time there is nothing of slavery in this control, and the people are happy and contented. They are loyal to their king, Oweida by name, and the ruling chiefs under him, and caste is strictly recognized. The people are quite free from all brutal tribal customs and obey but one law, that of the British administration. They are all quite civilized, many of them earning good wages working in the phosphate industry.

The sea around the island abounds with a great variety of fish, and the natives go out in the roughest weather in their frail canoes, returning in a few hours with large quantities of fish. These are not killed and eaten but are carefully conveyed alive to beautiful lagoons, or small lakes, in the hills. Every village owns a lagoon, and every villager a portion of

the water, which he fences off with palm leaves. The fish are put into these "paddocks" of water; and the housewife, whenever she requires fish for her household, goes off to the lagoon and with her hands catches all she wants. One Nauruan dance is a drama representing a fishing expedition, wherein the dancers have live fish tied to their heads, chests, arms, and legs. The weird effect can be imagined: as the dancers move the fish wriggle, their silvery scales against the black skins sparkling brightly in the glare of great palm-leaf fires.

The national sport of Nauru is the maintaining and capturing of hundreds of frigate birds, solemn-looking creatures of no use and not ornamental. In the season when these birds are plentiful gala days are arranged when owners of birds assemble at a rendezvous on the beach. Great roosts like skeleton roofs of houses are carried in procession from the villages, and these are covered with birds securely tethered, among them being some decoy birds. The decoys are uncanny creatures that display an intelligence almost human in the way they do their work. The decoys are let loose and instantly soar aloft to attract wild birds. These, at first unseen, presently come wheeling overhead in great numbers, are enticed to the roosts, and are promptly caught and tethered by young natives hidden below. At nightfall a count is made of the captures of the day, and the native king in an elaborate address proclaims the village that is the winner. During the rest of the night there is feasting and dancing; at daybreak the roosts are taken up, and all return to their villages.

Forty years ago the Germans took possession of this tiny island valued then but as a link in the chain of territories which the German Imperial Government hoped would surround the Pacific and give Germany mastery of the southern hemisphere. Before the war, while the full value of Nauru had been recognized by the Germans as a source of phosphate (huge royalties were derived from the exploitation, which was in the hands of a British company), they nevertheless considered the island still more valuable as a strategic naval station. On it was installed the most powerful wireless station of pre-war days—a station which played a very active part in the first weeks of the war as far as the Pacific was concerned. The general neglect, however, of so useful an island was hardly in accordance with German policy in the South Pacific, for on all other German islands the government and settlers did much to promote development and commerce, achieving therein signal success.

Since 1914 British administration has been in force. The administration promptly took an interest in the natives, especially in improving and making profitable the native coconut plantations and in the attention paid to health. A fine native hospital has been built and is excellently managed by an American doctor who has done wonders in coping with native diseases.

Meanwhile the rich phosphate deposits have made Nauru a "Treasure Island" in the eyes of many nations. Japan (who has secured the phosphate-producing island of Angaur in the Pelew Islands) claimed it as part of the German territory of the Marshalls, though it is south of the line. Australia and New Zealand both put in strong claims. The mandate, however, has been given to the British government. An agreement made subsequently divides the phosphate: the United Kingdom and Australia each receive 42 per cent of the output, New Zealand the remaining 16 per cent. It has been estimated both by British and German experts that there are at least 40,000,000 tons of phosphate rock on the surface of the hills, which can be mined and collected with little effort. The industry, which has been in the hands of a British enterprise known as the Pacific Phosphate Company, will be placed under the management of a commission whose officers are to be appointed by the English, Australian, and New Zealand governments. It is expected that the working staff, one with years of experience, will be continued and that the industry will be carried on without interruption.

The phosphate industry is justly accounted a notable enterprise. When it is borne in mind that Nauru is in one of the most remote parts of the world and that it costs much time and money to get there and back, nothing but praise can be given to the plucky British company that set up its machinery there and has for twenty years been supplying the agricultural world with one of the most necessary of soil constituents. The Nauru industry has all the accessories of a great modern enterprise—cantilever jetties, railways, steam and electric power, electric light, telephones, fresh and salt water-supply systems, and splendid sewerage. Welfare and living conditions of all employees are among the best regulated in the world. Chinese coolies, with Caroline, Marshall, and Nauru natives, under a competent staff of white people number in all upwards of a thousand people. The scene is always

busy, the activity the more surprising as one emerges from the solitude of the ocean. Over 100,000 tons of phosphate is exported annually, and in the future this output is to be doubled.

THOMAS J. McMAHON

The Mystery of Easter Island. Easter Island has long attracted attention as presenting one of the most interesting problems of Pacific ethnology. Towards its solution the Scoresby Routledge Expedition, at work on the island from 1914 to 1915, made notable contribution. An outline of the results accomplished by the Expedition was given in the *Geographical Journal* (Vol. 49, 1917, pp. 321-349) and abstracted in the *Geographical Review* (Vol. 4, 1917, pp. 221-222). Since then the narrative of the expedition has appeared under the title "The Mystery of Easter Island" (London, 1919). This volume by Mrs. Routledge is finely illustrated and agreeably written. In addition to the stay on the island Mrs. Routledge describes the journey thither and back in the specially designed schooner yacht *Mana*. Going out the *Mana* proceeded via the Strait of Magellan, the Patagonian waterways, and Juan Fernandez. On the homeward course by the Panama Canal, Pitcairn Island and Tahiti were touched. Detailed scientific results will be published in a second volume.

More recently (1917) Easter Island was visited by Carl Skottsberg and members of his expedition engaged in a biological survey of Juan Fernandez (see the article "The Islands of Juan Fernandez," *Geogr. Rev.*, Vol. 5, 1918, pp. 362-383). Certain interesting features of the island are briefly recounted in "Notes on a Visit to Easter Island" (extract from "The Natural History of Juan Fernandez and Easter Island," edited by Carl Skottsberg, Vol. 1, Upsala, 1920). The visit was short, and the object was primarily biological; but the people and the culture inevitably claimed some attention, and approving comment is made on Mrs. Routledge's deductions concerning the origin of the Islanders and their mysterious handiwork. Legendary tradition indicates populating of the islands by two main migrations, the earlier Melanesian, the later Polynesian. Dr. Skottsberg considers that relations with the western Pacific are clearly demonstrated in the similarity of the peculiar bird cult with that of the Solomon Islands (where the frigate bird is worshipped).

As a source still incompletely investigated attention is called to a critical examination of the language especially to the names of cultivated plants. *Cumara* is cited as a case in point. The sweet potato is known under this name from New Zealand through Polynesia to Easter Island. The word is also said to occur in Quechua and by some writers has been advanced as a proof of relations between western South America and Polynesia in pre-Columbian times.

Regarding the Easter Island culture Dr. Skottsberg makes comment on the physical conditions of life on the island. "The great scarcity of water makes the high development of the ancient culture quite astonishing." There is no running water on the island; sources are limited for the most part to lakes in the craters. One "cannot fail to notice the absence of every trace of valley or ravine caused by the action of running water." The rainfall indeed is considerable; for 8 years an average of 48 inches is recorded; but the volcanic soil is extremely porous, and under the hot sun and strong winds evaporation is high. Contrast with the islands of Juan Fernandez, situated 7° farther south and highly dissected by erosion, is most marked. Vegetation on Easter Island is poor. Apparently the island was never wooded; today only a few stunted trees exist. The greater part of the surface is covered with grass.

Dr. Skottsberg's paper is accompanied with a map (1:200,000) based on that of the Chilean Hydrographic Office; elevations, however, being given according to his own observations, which differ considerably from those of the Chilean map.

Agricultural Climatology of Australia. What is the rainfall, its reliability, its seasonal distribution? Tell the Australian agricultural climatologist, and he will indicate what part of his continent is referred to and what its chief agricultural products are. This, in effect, is demonstrated in Dr. Griffith Taylor's article, "Agricultural Climatology of Australia" (*Quart. Journ. Royal Meteorol. Soc.*, No. 196, Vol. 46, 1920, pp. 331-356). The delimitation of rainfall regions by these criteria give us the agricultural regions. The four major ones are: "The summer rain region in the north, the winter rain region in the south, the uniform rain region in the east, and the arid rain region in the center and middle west."

The hot north, because of its dry season and practically unbearable heat for any white man not doing more than light work, *e.g.*, riding with cattle in the open, is used for nothing but a sprinkling of cattle (it appears to be too hot for sheep).

The arid region of a million square miles contains less than one per cent. of the cattle and sheep of Australia. Aside from fodder, water for live stock is the limiting element: and cattle fare better than sheep, for cattle can cover so much greater distances.

The narrow, winter rain region in the south, with its subtropical location and reliable though moderate winter rainfall, supports chiefly wheat, sheep, and vines.

The uniform rain region in the east is the portion of Australia where the great majority of the people live and raise their crops and live stock. In the tropical section, Queensland and northeastern New South Wales, the summer maximum of rainfall and its quantity favor such crops as sugar cane on the coast and maize where the rainfall is less. There is plenty of timber in the rain forest, and in the drier interior cattle and sheep raising and some irrigation farming are carried on. Farther south, in southeastern New South Wales, Victoria, and the extreme southern part of Western Australia is the principal wheat and general farming and fruit-raising region. From the drier to the wetter parts, wheat, hay (largely grain cut green), oats, barley, and various fruits, grapes, oranges, peaches, apples, and pears are raised, and dairying is carried on. There is also an appreciable lumber industry. The winter maximum of rainfall and the dry summers are particularly favorable to wheat raising. Tasmania is wetter and cooler, its climate and products being very much like those of western Washington. Timber, oats, and dairy products are characteristic.

The agricultural future of the arid heart of Australia is not bright. Although there are more than two million square miles (more than two-thirds of the entire continent) which cannot be adequately developed without extra water, the irrigated areas in 1915 amounted to only a thousand square miles. However, the eastern mountains are well watered, and there are large artesian basins (under about two-thirds of a million square miles in the east-central part) which may be tapped for irrigation water; and big reclamation projects are under way. One alone is expected to provide ultimately 6,000 farms and a livelihood for 100,000 people. Drought is the ever-present menace of the principal cattle and wheat regions. Provision of better transportation facilities in these regions will allow the removal of live stock to better feeding grounds during droughts and thus prevent the heavy losses of the past.

CHARLES F. BROOKS

PHYSICAL GEOGRAPHY

Three Mountaineering Books; The Mt. Everest Expedition. Though most mountain climbing as an athletic sport contributes little or nothing to geographical knowledge, three recent mountaineering books and an ambitious plan for the ascent of the highest peak in the world are not without geographic interest.

In "Mountain Memories" Sir Martin Conway, former President of the British Alpine Club, looks back over a long and varied career of climbing in many ranges from Bolivian Andes to Karakoram, from Spitsbergen to Tierra del Fuego. The sporting and aesthetic aspects of mountaineering were always foremost in Sir Martin's spirit: he was Professor of Art at Cambridge, and the subtitle of his book is "A Pilgrimage of Romance;" but "Mountain Memories" also gives us a subjective insight into the evolution of a real and deep geographic enthusiasm. Sir Martin undoubtedly has that indefinable "geographic sense" which enables him to paint in vivid word pictures the appearance of mountain scenery in widely varied regions. Certainly books which make us "see" landscape fill an important place in geographical literature even though they make no pretense at being scientific.

"Mountain Craft," edited and to a large extent written by G. W. Young, and "Mountaineering Art," by Harold Raeburn, are handbooks for the climber and deal with matters of technique. They discuss in detail and with the discrimination of experts such practical questions as equipment, guides and guideless climbing, ice, snow, and rock work, mountaineering on skis, etc. Young is especially interested in the human and psychological aspects of mountaineering; his chapters on management and leadership contain many shrewd but sympathetic analyses of human emotions and impulses under conditions of fatigue, hardship, and danger. Though no man can learn from books either the art of leadership or the art of getting along with fellow travelers, Young furnishes many ideas that could be profitably considered by anyone planning to conduct geographical exploration whether on mountain snows or in warm lowlands. Both books deal with mountain reconnaissance and exploration. That skill in this branch of mountaineering art is of the utmost utility to geographer,

geologist, surveyor, and miner, whose business takes them into high ranges, will be recognized by all. Raeburn claims that some knowledge of geology is essential to the exploring mountaineer in order that he may tell "from a telephotograph, or a view through a glass at many miles' distance, the probable nature of the climbing on the peak he is aiming at" (p. 236). According to Young an adept in mountain reconnaissance can often judge whether he may expect to find rock, or ice, or névé on the opposite side of a range by the appearance of sky above the ridge crest. These are examples of some of the fine points of mountain reconnaissance. "Mountain Craft" concludes with a series of chapters by specialists giving valuable advice for would-be climbers in different parts of the world: the tropics, the Arctic, the Caucasus and Himalaya, Norway, New Zealand, the Pyrenees, Corsica and the Rocky mountains.

The Royal Geographical Society and the Alpine Club have this year organized a joint expedition for the ascent of Mt. Everest. Recent numbers of the *Geographical Journal* (January to May, 1921, inclusive) and the *Alpine Journal* (March, 1921) contain articles and notes on the geography of the Mt. Everest district, on Himalayan mountaineering in general, and on the plans for the expedition. Up to the present nobody has ever been within fifty miles of the highest mountain in the world. Telephotographic views of it from a distance give a most unsatisfactory idea of its topography because intervening ridges of immense height cut off from sight all but the very peak itself. Consequently a prime requisite will be the carrying out of a thorough survey of the mountain and its approaches. This will be the work of the season of 1921. It was planned for the party to leave Darjeeling in May and to work around to the north, or Tibetan, side of Everest by way of the Tang La Pass and Kampa Dzong to Tingri Dzong. As the bird flies an approach from the south would be more direct; but the southern side of the mountain lies in Nepal, a country closed to foreigners. Travel will also be easier to the north. The Tibetan slopes of the Himalaya as a whole have undergone less denudation and consequently are gentler than the Indian slopes; snow line is at a higher elevation (probably about 20,000 feet) owing to the fact that much of the moisture of the southwest monsoon is precipitated on its ascent of the windward slopes; yaks can in all probability be used as a means of transport through high, bare valleys and over arid ranges almost to snow line.

The preliminary reconnaissance of 1921 will certainly reap geographic results of great value; it goes without saying that much will be learned about Mt. Everest itself. In addition an immense unexplored tract to the north, northeast, and northwest will be revealed—a tract in which distant views have shown the presence of mountains of enormous height, rivaling, though probably not exceeding, that of Everest itself.

The attempt to reach the summit, scheduled for 1922, is to be led by Harold Raeburn, author of "Mountaineering Art." Mt. Everest rises over 4,500 feet above the highest recorded point to which man has climbed. The latest figure for the elevation of Mt. Everest is given by the *Geographical Journal* (January, 1921, p. 14) as 29,141 feet. The highest point reached by the Duke of the Abruzzi on Bride Peak, Karakoram, is 24,600 feet (the *Alpine Journal*, March, 1921, gives 24,583 feet). It is possible that at these immense altitudes wholly novel conditions of snow and ice may be found. The chances of success in the dash for the top will depend largely on atmospheric conditions; one thing in favor of the climbers is the fact that Everest lies relatively far back from the plains of India and is more or less masked by intervening heights from the clouds and snows brought by the monsoon. Probably the most interesting result of the expedition will be the new light that it will shed on human acclimatization to a combination of low air pressure with very low temperatures, for at the present time there is little uniformity either of opinion or of experience on this subject.

TERMINOLOGY AND ORTHOGRAPHY

The Spelling of Geographical Names. The origin and activities of the Permanent Committee on Geographical Names composed of representatives of interested departments of the British Government and of the Royal Geographical Society are described in brief by the chairman, Major General Gleichen in the January number of the *Geographical Journal*. The Committee had its inception, it is said, in the British Admiralty's dilemma over "what to call the place generally known as Walfisch Bay." A preliminary conference was held in April, 1919, and the Committee came into being the following month. The first concern of the Committee was to draw up a series of "Rules for the Spelling of Geographical Names for British Official Use" and a standard "Table of Spelling and Pronunciation." Both are

included in the above mentioned article. Together they are known as the R. G. S. II System and are based on an earlier system formulated by the Royal Geographical Society in 1865. Preparation involved such investigations as the scheme of Arabic transliteration described in the October, 1920, number of the *Geographical Journal* and the transcription of alphabets of some 32 languages which are to be published as No. 2 of the R. G. S. Technical Series. Work now being pursued with urgency includes the preparation of lists of place names in the territories of Britain's African mandates, Tanganyika Territory, Cameroons, and Togo, in order to settle spellings before they have time to "crystallize in wrong forms." Lists of the names are to be published from time to time as leaflets in the *Geographical Journal*. The first leaflet makes its appearance with the April number under the title "First General List of European Names." It may be obtained separately for the sum of sixpence from the Royal Geographical Society, Kensington Gore, London, S. W. 7.